FIGURE 1

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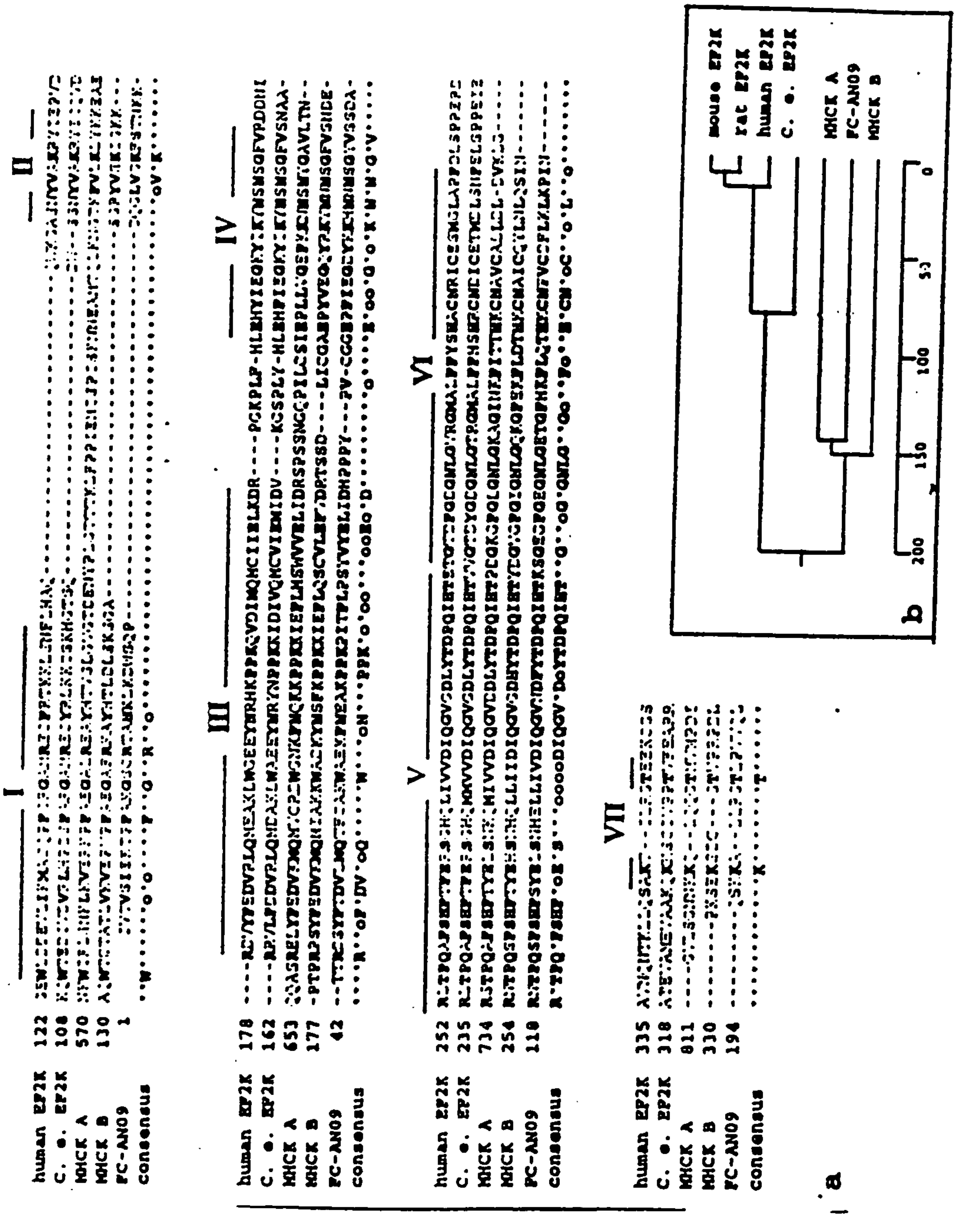

FIGURE 2

Sheet 2 of 31

601-1-098
CIP

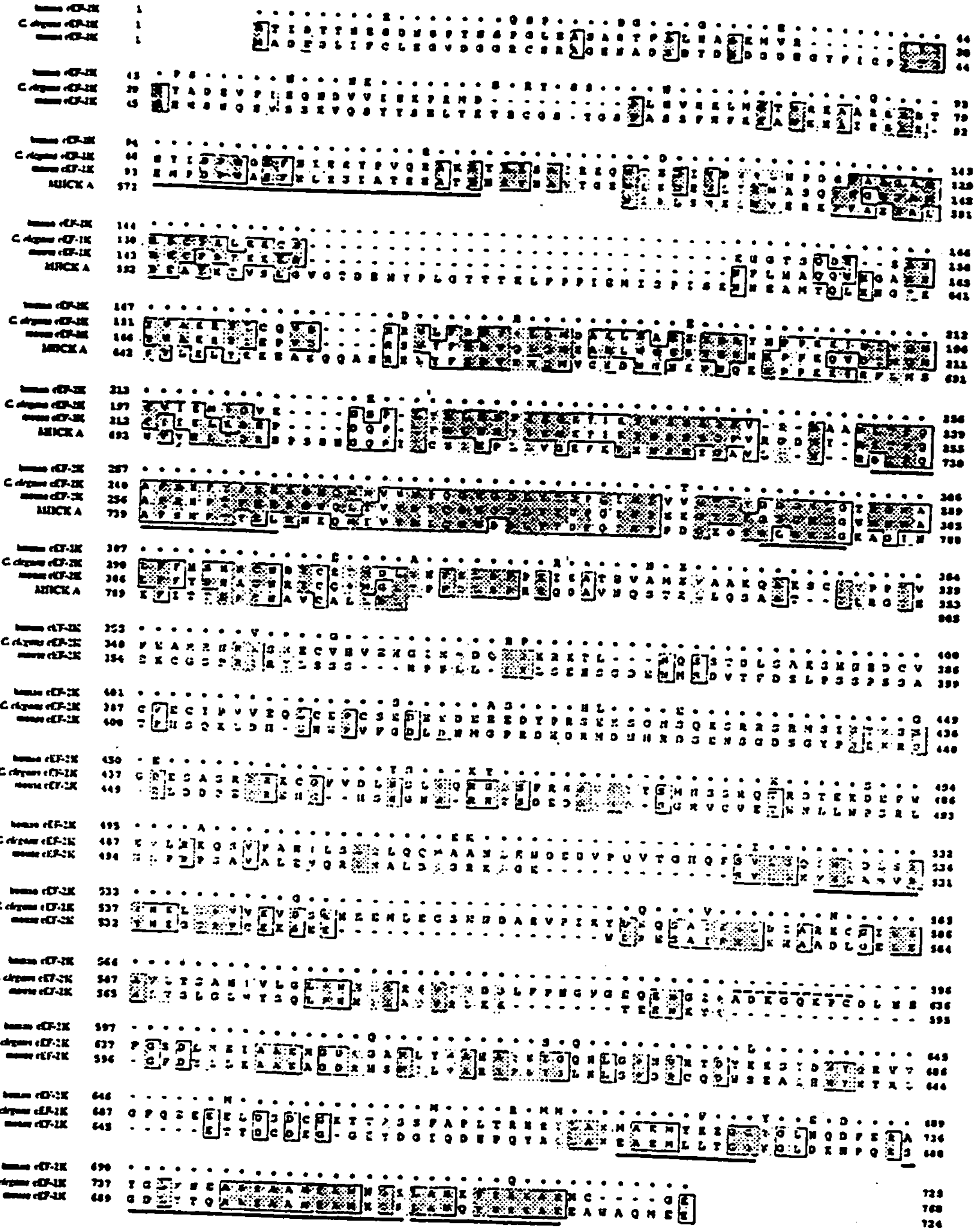

FIGURE 3

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CIP

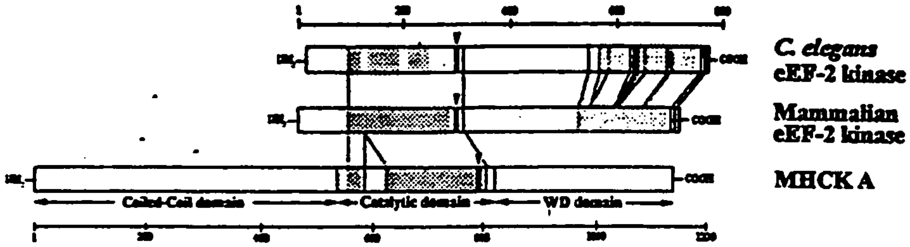

FIGURE 4

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CIP

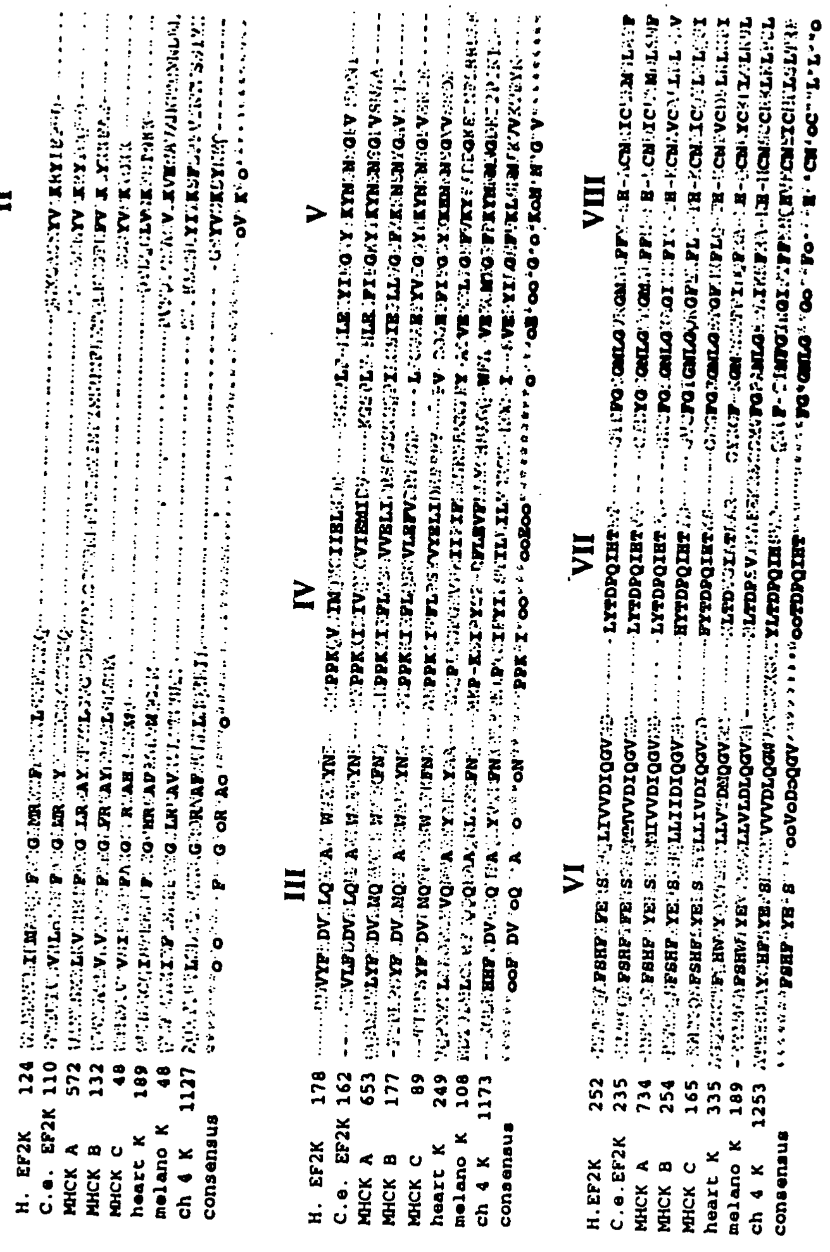

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FIGURE 5A

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CIP

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 121 gtccttgttc ggtggcccgt gccaccgcct ccggagacgc tttccgatag gtggctgcag
 181 gccgcggagg tggaggagga gccgctgccc ttccggagtc cgccccgtga ggagaatgtc
 241 ccagaaatcc tggatagaga gcactttgac caagagggag tgtgtatata ttataccaag
 301 ctccaaagac cctcacagat gtcttccagg atgtcagatt tgtcagcaac ttgtcagatg
 361 tttctgtggt cgtttggtca agcaacatgc atgctttact gcaagtcttg ccatgaaata
 421 ctcagatgtg agattgggtg aacactttaa ccaggcaata gaagaatggt ctgtggaaaa
 481 gcacacggag cagagcccaa cagatgctta tggagtcatc aattttcaag gggttctca
 541 ttcctacaga gctaagtatg tgagactatc atatgatacc aaacctgaaa tcattctgca
 601 acttctgctt aaagaatggc aaatggagtt acccaaactt gttatttctg tacatggagg
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FIGURE 5B

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FIGURE 5C Sheet 7 of 31 **601-1-098** CIP

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7081 tgtttacaaa
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FIGURE 6A

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CIP

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DIAKNHVFVYGQQWLVGSLEQAMLDALVMDRVSFVKLLIENGVSMHKFLTIPRLEELYNT

KQGPTNPMLFHLIRDVKQGNLPPGYKITLIDIGLVIEYLMGGTYRCTYTRKRFRLIYNSL

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GRLIYCLNIIFWYVRLLDFLAVNQQAGPYVMMIGKMVANMFYIVVIMALVLLSFGVPRKA

ILYPHEEPSWSLAKDIVFHPYWMIFGEVYAYEIDVCANDSTLPTICGPGTWLTPFLQAVY

LFVQYIIMVNLLIAFFNNVYLQVKAISNIVWKYQRYHFIMAYHEKPVLPPPLIILSHIVS

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FERVEQMSIQIKEVGDRVNYIKRSLQSLDSQIGHLQDLSALTVDTLKTLTAQKASEASKV

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EKDPQYNLFGQDLPVIPQRKEFNIPEAGSSCGALFPSAVSPPELRQRRHGVEMLKIFNKN

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GHRDSMDLQRFKETSNKIRELLSNDTPENTLKHVGAAGYSECCKTSTSLHSVQAESCSRR

FIGURE 6B

Sheet 9 of 31

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CIP

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LRRAVKVLCTWSEHDILKSGHLYIIKSFLPEVINTWSSIYKEDTVLHLCLREIQQQRAAQ

KLTFAFNQMKPKSIPYSPRFLEVFLLYCHSAGQWFAVEECMTGEFRKYNNNNGDEIIPTN

TLEEIMLAFSHWTYEYTRGELLVLDLQGVGENLTDPSVIKAEEKRSCDMVFGPANLGEDA

IKNFRAKHHCNSCCRKLKLPDLKRNDYTPDKIIFPQDESSDLNLQSGNSTKESEATNSVR

LML

Figure 7A

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Figure 7B

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Figure 8A

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Figure 8B

```
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3121   gtctacctct tcgtgcaata tatcatcatg gtgaacctgt tgattgcttt cttcaacaac
3181   gtttacttag atatggaatc catttcaaat aacctgtgga aatacaaccg ctatcgctac
3241   atcatgacct accacgagaa gccctggctg cccccacctc tcatcctgct gagccacgtg
3301   ggccttctcc tccgccgcct gtgctgtcat cgagctcctc acgaccaaga agagggtgac
3361   gttggattaa aactctacct cagtaaggag gatctgaaaa aacttcatga ttttgaggag
3421   cagtgcgtgg aaaaatactt ccatgagaag atggaagatg tgaattgtag ttgtgaggaa
3481   cgaatccgag tgacatcaga aagggttaca gagatgtact tccagctgaa agaaatgaat
3541   gaaaaggtgt cttttataaa ggactcctta ctgtctttgg acagccaggt gggacacctg
3601   caggatctct ctgccctgac tgtggatacc ctgaaagtcc tttctgctgt tgacactttg
3661   caagaggatg aggctctcct ggccaagaga aagcattcta cttgcaaaaa acttccccac
3721   agctggagca atgtcatctg tgcagaggtt ctaggcagca tggagatcgc tggagagaag
3781   aaataccagt attatagcat gccctcttct ttgctgagga gcctggctgg aggccggcat
3841   cccccaagag tgcagagggg ggcacttctt gagattacaa acagtaaaag agaggctaca
3901   aatgtaagaa atgaccagga aaggcaagaa acacaaagta gtatagtggt ttctggggtg
3961   tctcctaaca ggcaagcaca ctcaaagtat ggccagtttc ttctggtccc ctctaatcta
```

Figure 9A

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```
4021    aagcgagttc cttttcagc agaaactgtc ttgcctctgt ccagaccctc tgtgccagat
4081    gtgctggcaa ctgaacagga catccagact gaggttcttg ttcatctgac tgggcagacc
4141    ccagttgtct ctgactgggc atcagtggat gaacccaagg aaaagcacga gcctattgct
4201    cacttactgg atggacaaga caaggcagag caagtgctac ccactttgag ttgcacacct
4261    gaacccatga caatgagctc ccctctttcc caagccaaga tcatgcaaac tggaggtgga
4321    tatgtaaact gggcattttc agaaggtgat gaaactggtg tgtttagcat caagaaaaag
4381    tggcaaacct gcttgccctc cacttgtgac agtgattcct ctcggagtga acagcaccag
4441    aagcaggccc aggacagctc cctatctgat aactcaacaa gatcggccca gagtagtgaa
4501    tgctcagagg tgggaccatg gcttcagcca aacacatcct tttggatcaa tcctctccgc
4561    agatacaggc ccttcgctag gagtcatagt tttagattcc ataaggagga gaaattgatg
4621    aagatctgta agattaaaaa tctttcaggc tcttcagaaa tagggcaggg agcatgggtc
4681    aaagcgaaaa tgctaaccaa agacaggaga ctgtcaaaga aaaagaagaa tactcaagga
4741    ctccaggtgc caatcataac agtcaatgcc tgctctcaga gtgaccagtt gaatccagag
4801    ccaggagaaa acagcatctc tgaagaggag tacagcaaga actggttcac agtgtccaaa
4861    tttagtcaca caggtgtaga accttacata catcagaaaa tgaaaactaa agaaattgga
4921    caatgtgcta tacaaatcag tgattaccta aagcagtctc aagaggatct cagcaaaaac
4981    tctttgtgga attccaggag caccaacctc aataggaact ccctgctgaa aagttcaatt
5041    ggagttgaca agatctcagc ctccttaaaa agccctcaag agcctcacca tcattattca
5101    gccattgaaa ggaataattt aatgaggctt tctcagacca taccatttac accagtccaa
5161    ctgtttgcag gagaagaaat aactgtctac aggttggagg agagttcccc tttaaacctt
5221    gataaaagca tgtcctcttg gtctcagcgt gggagagcgg caatgatcca ggtattgtcc
5281    cgagaggaga tggatggggg cctccgtaaa gctatgagag tcgtcagcac ttggtctgag
5341    gatgacattc tcaagccggg acaagttttc attgtcaagt cctttcttcc tgaggttgtg
5401    cggacatggc ataaaatctt ccaggagagc actgtgcttc atctttgcct cagggaaatt
5461    caacaacaaa gagctgctca aaaattgatc tataccttca accaagtgaa accacaaacc
5521    ataccctaca caccaaggtt cctggaagtt ttcttaatct actgccattc agccaaccag
5581    tggttgacca ttgagaagta tatgacaggg gagttccgga agtataacaa caacaatggt
5641    gatgaaatca cccccaccaa caccctggag gagctgatgt tggctttctc tcactggacc
5701    tatgagtaca ctcggggaga gctgctggtt ttagatttgc aaggtgttgg agaaaatttg
5761    acagatccat ctgttataaa acctgaagtc aaacaatcaa gaggaatggt gtttggaccg
5821    gccaatttgg gggaagatgc aattagaaac ttcattgcaa aacatcattg taactcctgc
5881    tgccggaagc tcaaactccc ggatttaaaa agaaatgact attcccctga aaggataaat
5941    tccacctttg gacttgagat aaaaatagaa tcagctgagg agcctccagc aagggagacg
6001    ggtagaaatt ccccagaaga tgatatgcaa ctataaaaag ggaggagcaa gaagatccca
6061    gtgcttgccc tgcctgccag gaactctgtg ataacataga ttgatcaacg tgatgttgat
6121    tacatcagcg tctccttggg acacgccttc tgagcctcac atctccttct gttcaaaggc
6181    ctcattggta tatgatcaat gggttctcct agacactgac ctctgtccag ggcactttgc
6241    agctccatcc tcaagttcca cacgaagatg cttggatgag tcagctggga atattgttct
6301    tgtgtacctc attgctttag ctggtcactt ggaactttgg agcagaatcc tgcacattaa
6361    aggatggggt tgggggggat acatttattt tattttctca ctatgtatgc agactggacc
6421    ccctactact atttgtcacc tcacccacag attgtattta tgtctatata tatgttcata
6481    aaaagttatg tgatttcctc ctctgtcttt tccacaacat aggactttga atagcaatga
6541    taggaaaaac aatggaacaa gggtgggttt gcacagattg gagcacattc ctgcacaaac
6601    taccaagtat actggtgaaa tctcgatggg tttcagatat tgtcagtgaa tcatatgatg
6661    cctggatatt tcaggtttct gtaaaagaaa gggaaaccta aaacaaatac ccttccatat
6721    ataatatata tggaatatgt atattatata tatttttata tatataatat atatggaata
6781    tatatattat atatataaaa tacatatgga atatatatat tttatatata tatatatatt
6841    tttatttttg agatggagtt tcactctttt tacccaggct ggagtgcaat gatgcgatct
6901    cactgcaacc tctgcctccc gggcttgagc gattcttgtg tctcagtctt ccgggtagct
6961    gggactacag gtgtgcacca ctatgcctgg ctaattttgt atttttagta gagatggggt
7021    ttcaccatgt tggccaggct ggtctcaaac tcctgacctc agatgatcca cctgccttgg
7081    cttcccaaag tgctgggatt acaggcgtga gccactgcgc ctggcctttt tttttttttt
7141    tttaaacgag aacaagaata tgaagaactg gaaatcatta agaaagggtt tcccttcctt
7201    aaagctcagg ggtactatta gttaggagtt gactaactca acctgtaaaa caccactcct
7261    ccttccaaag ttgtatatat aatattgcag gttaaattac tttatgtcag gtcctatgaa
7321    gaaagatacg gtttcagact gaaaacatgt ttcacaggtg tttgcttcct tccagagcag
7381    agttccctat tcccctggca taaagaatgt atatatattt tgaaatatgg ctgagaacat
7441    gtcattggtt tgtgaggcct aaggtgaagc actcctggca gccacactgt gtagtgtatt
7501    tgagggatca gtcatccctc ttgtatgctg ggcctggttg ccctacctcg aacaagcacc
7561    agcttttcac acaaggagag atgtggggct gggagtcctc tccccatcct attgcatctc
7621    ctttcttatt ataagctgtt ccagttcaca ggcagcaaac ctcctgggtt tgaaaaattc
7681    caacttattt ttatctttaa tcctgacatt agctgacttg ctagtgagct tgctttaaaa
7741    atctacactc ttgcattctt aggcatacag ggaaatgtt gaaaaggaag gtggaaaacc
7801    aagaatttag tttgccaatg attgcctctg attcttgtaa gtttgagttc cacaagggct
7861    aatttattcc cctttacttg ggtttttggg gtggtggaaa gcgggaaatt tgggtgattt
7921    gttgattggc aatgaggata aaatgttaat actttttttgg ggacttaaca actttatcct
7981    attctacaag tcagtaaagg aacaattggt actcacctca gtgctgcact caactatgga
```

Figure 9A

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```
8041       aagaggcaga gtttgcttgc ccaattgcca aactaaagac atcagttcat tggtcaaata
8101       tttgttacct ggaatggaac ttgaaagcaa atacatttgg atttcaaatt tcaaaaaa
```

Figure 9A

Human kidney kinase

```
MSQKSWIKGVFDKRECSTIIPSSKNPHRCTPVCQVCQNLIRCYCGRLIGDHAGIDYSWTIS
AAKGKESEQWSVEKHTTKSPTDTFGTINFQDGEHTHHAKYIRTSYDTKLDHLLHLMLKE
WKMELPKLVISVHGGIQNFTMPSKFKEIFSQGLVKAAETTGAWIITEGINTVSKHVGDAL
KSHSSHSLRKIWTVGIPPWGVIENQRDLIGKDVVCLYQTLDNPLSKLTTLNSMHSHFILS
DDGTVGKYGNEMKLRRNLEKYLSLQKIHCRSRQGVPVVGLVVEGGPNVILSVWETVKD
KDPVVVCEGTGRAADLLAFTHKHLADEGMLRPQVKEEIICMIQNTFNFSLKQSKHLFQIL
MECMVHRDCITIFDADSEEQQDLDLAILTALLKGTNLSASEQLNLAMAWDRVDIAKKHI
LIYEQHWKPDALEQAMSDALVMDRVDFVKLLIEYGVNLHRFLTIPRLEELYNTKQGPTN
TLLHHLVQDVKQHTLLSGYRITLIDIGLVVEYLIGRAYRSNYTRKHFRALYNNLYRKYK
HQRHSSGNRNESAESTLHSQFIRTAQPYKFKEKSIVLHKSRKKSKEQNVSDDPESTGFLY
PYNDLLVWAVLMKRQKMAMFFWQHGEEATVKAVIACILYRAMAHEAKESHMVDDAS
EELKNYSKQFGQLALDLLEKAFKQNERMAMTLLTYELRNWSNSTCLKLAVSGGLRPFV
SHTCTQMLLTDMWMGRLKMRKNSWLKIIISIILPPTILTLEFKSKAEMSHVPQSQDFQFM
WYYSDQNASSSKESASVKEYDLERGHDEKLDENQHFGLESGHQHLPWTRKVYEFYSAP
IVKFWFYTMAYLAFLMLFTYTVLVEMQPQPSVQEWLVSIYIFTNAIEVVREVSISEPGKF
TQKVKVWISEYWNLTETVAIGLFSAGFVLRWGDPPFHTAGRLIYCIDIIFWFSRLLDFFA
VNQHAGPYVTMIAKMTANMFYIVIIMAIVLLSFGVARKAILSPKEPPSWSLARDIVFEPY
WMIYGEVYAGEIDVCSSQPSCPPGSFLTPFLQAVYLFVQYIIMVNLLIAFFNNVYLDMESI
SNNLWKYNRYRYIMTYHEKPWLPPPLILLSHVGLLLRRLCCHRAPHDQEEGDVGLKLY
LSKEDLKKLHDFEEQCVEKYFHEKMEDVNCSCEERIRVTSERVTEMYFQLKEMNEKVS
FIKDSLLSLDSQVGHLQDLSALTVDTLKVLSAVDTLQEDEALLAKRKHSTCKKLPHSWS
NVICAEVLGSMEIAGEKKYQYYSMPSSLLRSLAGGRHPPRVQRGALLEITNSKREATNV
RNDQERQETQSSIVVSGVSPNRQAHSKYGQFLLVPSNLKRVPFSAETVLPLSRPSVPDVL
ATEQDIQTEVLVHLTGQTPVVSDWASVDEPKEKHEPIAHLLDGQDKAEQVLPTLSCTPE
PMTMSSPLSQAKIMQTGGGYVNWAFSEGDETGVFSIKKKWQTCLPSTCDSDSSRSEQHQ
KQAQDSSLSDNSTRSAQSSECSEVGPWLQPNTSFWINPLRRYRPFARSHSFRFHKEEKLM
KICKIKNLSGSSEIGQGAWVKAKMLTKDRRLSKKKKNTQGLQVPIITVNACSQSDQLNP
EPGENSISEEEYSKNWFTVSKFSHTGVEPYIHQKMKTKEIGQCAIQISDYLKQSQEDLSKN
SLWNSRSTNLNRNSLLKSSIGVDKISASLKSPQEPHHHYSAIERNNLMRLSQTIPFTPVQL
FAGEEITVYRLEESSPLNLDKSMSSWSQRGRAAMIQVLSREEMDGGLRKAMRVVSTWS
EDDILKPGQVFIVKSFLPEVVRTWHKIFQESTVLHLCLREIQQQRAAQKLIYTFNQVKPQ
TIPYTPRFLEVFLIYCHSANQWLTIEKYMTGEFRKYNNNNGDEITPTNTLEELMLAFSHW
TYEYTRGELLVLDLQGVGENLTDPSVIKPEVKQSRGMVFGPANLGEDAIRNFIAKHHCN
SCCRKLKLPDLKRNDYSPERINSTFGLEIKIESAEEPPARETGRNSPEDDMQL
```

Figure 9B

601-1-098C11

GTATCAGGACTCAGCCCATTTCCCCCTCTGGTGCTGAGAAATGGAGGCCGAAGGAGTGATCTAGAAGTGTTAATTGAGCCCCTAATCTATGCTAGTTACTGGGGG
TGTTGGGGGAGACAGGAGAGAGATCCCACGGGGTTCCGGCCTCCCAGGGACTCAGGTCACTAATGGAGGTGGCTTGGCTTGTCTATGTGCTGGGCCAACAGCCA
CTGGCGAGGCAAGGCGAGGGTCAGTCACGGCTGGTGCCAGGAAGAGGGCTGGTTCTTTGGCTCCCTGGTCTCCCGCGGTCTAGCCCAAGCTGGCCAGCGGTTGAC
CTGGCTCCCCTGGCCCCGGCCAGGCCTCGTGGACCCCTCATATGCCACACGGGACATGAGCAGGCCGGCCGGGAGCCGGGTCCCGGGAGCTCCACGAAGGGGCC
TGTCCTCCATGACCAGGACACCCGCTGCGCCTTCCTCCCGAGGCCTCCCGGGCCTCTCCAGACGCGGCGCTACTGCAGACACCAGGGCCGCCAAGGGAGCGGACT
CGGAGCCGGCCCTGGGGCGGGCACATGGGCCCCGGCGCCCCCCGGCGTCTCCAAGCCGCGCTGCCCGGGTCGGGCCAGGCCAGGGGAGGGACAGCAGCAGGTG
ACGACGGCCCGGCCACCGGCTATAAATAGGGGCGCGCGTCAGCCGCGGGCGGGAGCGGCGGCGGCGGGCAGGGGCCCGGGGGCCGGGGCCTGGAGGACAGGC
GAGGCAGCGGCGAGTGCGGGGCCGGCGGTCGGGGAGGGCGGTGCCATGGGGTCGCGGAGGGCCCCCACCCGGGGCTGGGGCGCGGGTGGGCGGTCGGGGGCG
GGGGGCGACGGTGAGGACGACGGCCCCGTGTGGATCCCCAGCCCAGCCAGCCGGAGCTACCTGCTCAGCGTGCGGCCCGAGACCAGCTTATCAAGCAACCGGTT
GTCTCACCCCAGCTCTGGAAGGAGCACCTTCTGCTCCATCATTGCTCAGCTCACAGAGGAGACCCAGCCGCTATTTGAGACCACGCTCAAGTCCCGGTCTGTGTCC
GAGGACAGCGACGTCAGGTTCACCTGCATCGTCACAGGATACCCAGAGCCAGAGGTGACCTGGTACAAGGATGATACGGAGCTGGACCGCTACTGTGGCTTGCC
AAAATATGAGATCACTCATCAGGGCAACCGCCACACACTGCAGCTGTACAGGTGTCGAGAAGAAGATGCCGCCATCTACCAGGCCTCTGCCCAGAACAGCAAGG
GCATTGTGTCCTGCTCAGGGGTCCTGGAGGTGGGCACCATGACTGAGTACAAGATCCACCAGCGCTGGTTCGCCAAGTTGAAGCGCAAGGCTGCGGCAAAGCTG
CGCGAGATCGAGCAGAGCTGGAAGCACGAGAAGGCGGTGCCTGGGGAGGTCGACACTCTGCGCAAGCTCAGCCCCGACCGCTTCCAGCGAAAGCGGCGATTGA
GCGGGGCTCAAGCGCCGGGCCCCTCGGTCCCTACCAGGGAGCCTGAGGGTGGGACCCTGGCGGCTTGGCAGGAGGGAGAGACTGAGACTGCTCAGCACTCAGGT
TTGGGCCTGATCAACAGTTTTGCTTCTGGAGAAGTGACCACCAACGGGGAGGCTGCCCCCGAGAATGGAGAGGACGGAGAGCATGGCTTGCTGACATACATCTG
TGACGCCATGGAGCTGGGGCCTCAGAGAGCCCTCAAAGAGGAGAGTGGGGCCAAGAAGAAAAAGAAAGATGAGGAATCCAAGCAAGGCCTGCGGAAGCCAGA
GTTAGAGAAGGCAGCCCAAAGCCGCCGTTCTTCAGAAAACTGCATCCCCAGCTCAGACGAGCCTGACTCCTGTGGGACTCAGGGGCCCGTGGGCGTGGAGCAGG
TTCAGACCCAGCCCAGAGGCAGGGCTGCACGGGGGCCTGGGTCCTCTGGCACAGATAGTACCAGGAAGCCAGCCTCTGCTGTGGGCACTCCAGACAAGGCCCAG
AAGGCCCCTGGCCCAGGCCCAGGCCAGGAAGTGTATTTCTCCTTGAAGGACATGTACCTGGAGAACACCCAGGCAGTCAGGCCTCTTGGGGAAGAGGGACCCCA
GACCCTGAGTGTCCGGGCGCCTGGGGAGAGTCCCAAGGGGAAGGCACCCCTCAGGGCTAGAAGCGAGGGGGTGCCTGGCGCTCCTGGCCAGCCCACACACTCCT
TGACCCCCCAGCCGACTAGGCCTTTCAACAGAAAGAGATTTGCCCCTCCAAAGCCCAAAGGAGAGGCCACCACTGACAGCAAGCCCATTTCTTCTCTGAGTCAAG
CTCCAGAATGCGGGGCCCAGAGCTTAGGAAAGGCCCCACCTCAGGCCTCTGTGCAGGTGCCGACGCCCCCTGCCCGGCGGAGACATGGCACCCGGGACAGCACG
TTGCAGGGGCAAGCAGGCCACAGGACTCCAGGAGAGGTCCTGGAATGCCAGACAACCACGGCTCCTACCATGTCGGCCAGCAGCAGCTCTGATGTAGCCTCCAT
TGGGGTTAGCACTTCCGGAAGTCAAGGTATCATTGAACCCATGGATATGGAAACCCAGGAGGATGGGAGAACATCTGCTAACCAGAGAACTGGAAGCAAGAAG
AATGTGCAGGCAGATGGGAAGATACAAGTGGATGGAAGGACCAGGGGAGATGGAACACAGACAGCCCAGAGGACACGTGCAGATAGGAAGACGCAGGTGGAT
GCTGGGACACAAGAAAGCAAGAGGCCACAGTCAGACAGGAGTGCACAGAAGGGCATGATGACACAGGGAAGGGCAGAGACACAGCTAGAAACAACACAGGCA
GGTGAGAAGATACAGGAAGACAGGAAGGCCCAGGCAGATAAGGGCACACAGGAAGACAGAAGGATGCAGGGAGAGAAGGGGATGCAGGGAGAGAAGGGGAC
GCAGTCAGAGGGGAGCGCGCCCACAGCCATGGAAGGTCAGTCTGAGCAAGAGGTGGCAACCAGCCTCGGCCCACCATCCAGAACCCCCAAACTCCCACCTACAG
CGGGTCCTAGAGCTCCTCTGAATATTGAATGTTTTGTACAGACCCCAGAAGGGTCTTGTTTCCCAAAAAAACCTGGTTGCCTGCCCAGATCTGAGGAGGCAGTAG
TAACAGCCTCCAGGAACCATGAGCAAACTGTGCTGGGTCCCCTGTCAGGGAACCTCATGCTCCCAGCACAGCCGCCCCATGAGGGGAGTGTGGAGCAGGTGGGA
GGAGAGAGATGCCGAGGGCCACAGTCATCAGGCCCAGTCGAGGCCAAGCAGGAGGACAGCCCGTTCCAGTGCCCCAAGGAGGAGCGGCCAGGGGGAGTGCCGT
GTATGGATCAGGGTGGCTGTCCTCTAGCTGGCCTGAGCCAGGAGGTACCCACGATGCCTTCTCTTCCTGGAACTGGGCTGACAGCTAGCCCAAAGGCGGGGCCGT
GTAGCACCCCGACTTCTCAGCACGGGAGCACAGCCACCTTCCTGCCCTCTGAGGATCAGGTCCTGATGAGTTCTGCCCCAACACTGCACCTGGGGCTGGGGACCC
CCACTCAGAGTCACCCACCAGAAACCATGGCCACCAGCAGTGAGGGGGCCTGCGCCCAGGTACCAGATGTGGAGGGGCGGACCCCAGGTCCCCGGAGCTGTGAC
CCTGGCCTCATAGATTCCCTGAAGAACTACCTGCTTCTGCTGCTGAAGCTGTCCAGCACAGAGACAAGTGGAGCAGGGGGAGAGTCCCAGGTGGGGGCAGCCAC
CGGAGGTCTGGTGCCCTCAGCCACTCTGACACCCACTGTGGAAGTGGCTGGGCTTAGTCCCCGGACATCGAGGCGCATCCTGGAGCGTGTGGAGAACAACCACCT
GGTGCAGAGTGCACAGACCCTGCTGCTGAGCCCCTGTACCTCCCGCCGCCTCACCGGCCTCCTGGACCGTGAGGTGCAGGCTGGCCGCCAGGCCCTTGCTGCTGC
CCGAGGCTCCTGGGGTCCTGGTCCCAGCTCCCTCACTGTCCCTGCCATTGTGGTAGACGAGGAGGACCCTGGGCTGGCCTCAGAAGGAGCCAGTGAGGGTGAAG
GAGAGGTTTCCCTTGAGGGGCCTGGCCTCCTGGGGGCCTCTCAGGAGAGCAGCATGGCTGGTCGACTGGGGGAGGCGGGTGGGCAGGCAGCCCCTGGACAGGGG
CCCTCAGCAGAGAGCATAGCCCAGGAGCCCTCCCAAGAGGAGAAGTTCCCAGGGGAGGCTCTGACAGGCCTCCCGGCAGCTACACCTGAGGAACTGGCTCTAGG

Figure 10A

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GGCCCGGAGGAAGAGATTTCTCCCTAAGGTCAGAGCAGCAGGAGACGGGGAGGCAACCACACCTGAAGAAAGGGAGAGCCCCACGGTTTCCCCCCGGGGGCCC
AGGAAAAGCCTGGTGCCTGGGTCCCCAGGGACTCCAGGGCGGGAGAGACGCTCCCCTACGCAGGGCAGAAAGGCGAGCATGCTGGAGGTGCCTCGGGCAGAGG
AGGAGCTGGCGGCAGGAGACCTGGGCCCCAGCCCCAAGGCCGGCGGTCTGGACACAGAGGTGGCCCTGGATGAAGGCAAGCAGGAGACACTGGCCAAGCCCAG
GAAAGCCAAAGACCTGCTGAAAGCCCCACAGGTGATCCGGAAGATTCGGGTGGAGCAGTTTCCTGATGCCTCCGGTAGCCTGAAGCTGTGGTGCCAGTTTTTCAA
CATTCTTAGTGACTCAGTCTTGACATGGGCCAAGGATCAGCGCCCAGTGGGCGAGGTGGGCAGGAGCGCAGGGGATGAGGGGCCGGCGGCCTTGGCCATCGTGC
AGGCCTCCCCCGTAGACTGCGGTGTGTATCGGTGCACCATCCACAATGAGCACGGCTCGGCCTCCACCGACTTCTGCCTCAGCCCTGAGGTGTTGTCAGGATTCAT
CTCCAGAGAAGAAGGTGAAGTTGGAGAAGAGATTGAGATGACCCCTATGGTGTTTGCTAAGGGTCTGGCTGACTCTGGCTGCTGGGGGGACAAGCTCTTTGGGC
GACTGGTAAGCGAGGAGCTCCGAGGGGGTGGATATGGGTGTGGCCTTCGGAAGGCCTCCCAGGCCAAGGTCATCTACGGGCTGGAACCCATCTTCGAGTCGGGC
CGCACGTGCATCATCAAGGTGTCCAGCCTGCTTGTGTTTGGGCCCAGCAGTGAGACTTCTCTTGTGGGCAGAAACTACGACGTCACCATCCAGGGGTGCAAGATC
CAGAACATGAGTCGGGAGTACTGCAAAATCTTCGCAGCAGAAGCCCGGGCCGCGCCTGGCTTTGGGGAGGTGCCTGAGATCATCCCACTGTATCTGATCTACCGG
CCTGCAAACAATATCCCATATGCTACCCTGGAGGAAGACCTGGGCAAGCCCCTGGAGTCTTACTGTTCTCGGGAATGGGGCTGTGCTGAGGCTCCGACAGCATCT
GGCAGCTCTGAGGCCATGCAGAAATGCCAGACCTTCCAACACTGGCTGTATCAGTGGACAAATGGCAGCTTCCTTGTCACAGACTTGGCAGGGGTTGACTGGAAG
ATGACTGATGTGCAGATTGCTACCAAACTCCGAGGATACCAGGGCCTCAAGGAAAGCTGCTTCCCTGCCCTGCTGGACCGGTTCGCCTCCTCCCACCAGTGCAAT
GCCTACTGTGAGCTGCTGGGGCTGACACCTCTCAAGGGCCCGGAGGCGGCCCACCCCCAAGCCAAAGCCAAAGGCTCTAAGAGTCCATCTGCTGGCAGGAAAGG
CTCCCAGCTGAGTCCTCAGCCCCAGAAGAAAGGCCTCCCTAGTCCTCAGGGCACCCGGAAGAGTGCTCCAAGTTCCAAGGCCACCCCTCAGGCCTCAGAGCCAGT
CACCACTCAGTTGTTGGGACAGCCTCCCACCCAAGAGGAGGGCTCCAAGGCCCAGGGCATGCGGTAGCCTCTGCAGAGGCTGGGGGCCTCCACCCAGCAGCAGA
CCAACCAGGAAGCAGCTTGAACTGGATGGAGACTTTCCAAATATGGAACTAACTGGAGAAGGTGCACGAAGGAGACACCACTTGGGGACCTCTCTGAGCAGGCT
CTCGTGAATCAGCTCGTCATCAGATGGCTTTGGTGCATGGCACATAGCCCACTGGCCTCTTCTGGTGCCACTGTCACCCAGGGCTCCCGGGCCTCAAGCAGTCCCC
ACCTCCGAGTGCCTGGCAACCTAGGCCCTCCTTGAAGTTTACACTTTGCCACTGCTGGAGGCTCCCCTGAGTCCTCTGCATGAGTTCTGCACCCCAAGCCCTTGCC
CCAGCCCAGTCCAGCAGCAGATGTTACAATCTGAGTGAGGACATGCAGGCCAACTTTTACCCTCCTGCATTTGCCTGGCCCTGATCTCGCCTGTCCTCAGGGATCC
AGACTTCCTCTGCTGGTCTGGCCTGGTGACTCTCAGGGTATCTTCTCCTTCCAGCTACTTTCGCTCACTGATCTCAGCTTATCCTGCAACTAACCATCCTTGAGCCC
AGATGGGGCTCAGGGCCCTTCCAGAGCCTGTCATGTCCTTGTGCAGTGGCCTTTGATGTGTGTTCACGCTCTTCCCCCTTCACTCACTCGCCTGCTTCCCATGCTCC
CTTGTACCCCCTCGCCACATCCCTGTCTTGGGGCCCAGCTGCAGCCTGCTGCCTGCCCTTCATGGCTCTGCACATGGCCCTTTGCTTGAGGGCTCCCCACTCCCTGC
CCACCAATACCCAGGTGAGGAACAGACCCTCTGGCCTCTCACCCCACTTCAGTGCTCTCTTCCCCAACTTCTCTCGGGCTCTTTGCTCATGAGGTGAGAGCTGGTG
TGAGGGTTGTGTCAGCAGCTGTAGCCAGAGAGAGGTGTTGACTCTGAGAGACCTTGCACTCCATACTGAAAGGAGGTGGGGTCACAGTGAATTTCACATCCCCTC
TCAACCAGGAGTGGAGGGCTAGGTCCCTTCCCCATGGGGAGTACACTTGGGTGTTCTAGGAGGGATGCAGTCTATCCATGCACTTGGGTGGAGGGGAGTCTCTGT
GCCTGGGAATTAGGACCCCTGCTCCAACCATCGCTCTTGATCCTGGGGCCCCAGCTCTGGGTCCTCATGTATGGGCTCCCAAGGACCCAGCAGCCTGGATCCTTCC
AGAGCATCCCTCCTGGAGGCCTGGGATGGGGTAGGTCTGCAGCTAGCCTACTCCCTTTGGAATGCAATAAAGGCAGCATTGTGTGCCCTGCTTGCCCTCATCTGGT
GTGGTTGGAGGTCTGTGGAGTCAAGGTCCCCCTCTCCCAGGCAGGCTCTCTGAGGGCATTCTGTAGTCCCAGGCCCACTGGAAAAATGAATCTATATTTTGGTTCC
TGGACCGAAGTTCAGTCGCAGCCTTCTGTGGCCACAGAAAGACAGCTTGTGCTGCTTGCACAACTGAGCTGCTGGTGTGTACCCCTTAGCAGGGTGTCTGGGGAC
TTACGCCTTTGGAATTGCTCTTCATTCAGAAGAGGAACACAAAGGAAGCCACCCAGGAAGGAAGCACAGAGCTGGGGGCTCTGGAAACGCCCTGTGTCTCTGGC
TACAGCAAGACCAGCCCAGGAGCCCACCAGCACCTGCCTCTCAGCTACTTGCTGACCATTTCCTGCTTCTCAAGCTGCAGAGAAGCTTTTCATTCCCACCCCCACC
CGGAACCTCCCCTTGCCTAACATTTCCCCTCTATGGTAACATCTCTGACTTCTCTACCTCCTCTGTGCTCAGGTGACTCCACATCTTCTGCCCCAGTGTGTCCCCAC
CTCTCCCAGCCTGTATACCCAGATTACTTTGGTGAACTGAAAAA

Figure 10A

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MEVAWLVYVLGQQPLARQGEGQSRLVPGRGLVLWLPGLPRSSPSWPAVDLAPLAPARPRGPLICHTGHEQAGREPGPGSST
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Figure 10B

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Figure 11A

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MNNQKVVAVLLQECKQVLDQLLLEAPDVSEEDKSEDQRCRALLPSELRTLIQEAKEMKWPFVPEKWQY
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DREGRAMHSLHSQLHDLSLQEPNNDNLEPSQNQPQQQMPLTPFSPHNTPGIFLAPGAGLLEGAPEGIQEVR
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HLHQEEILGRYVGKDYKEQKGLWHHFTDVERQMTAQHYVTEFNKRLYEQNIPTQIFYIPSTILLILEDKTIK
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Figure 11B

FIGURE 12

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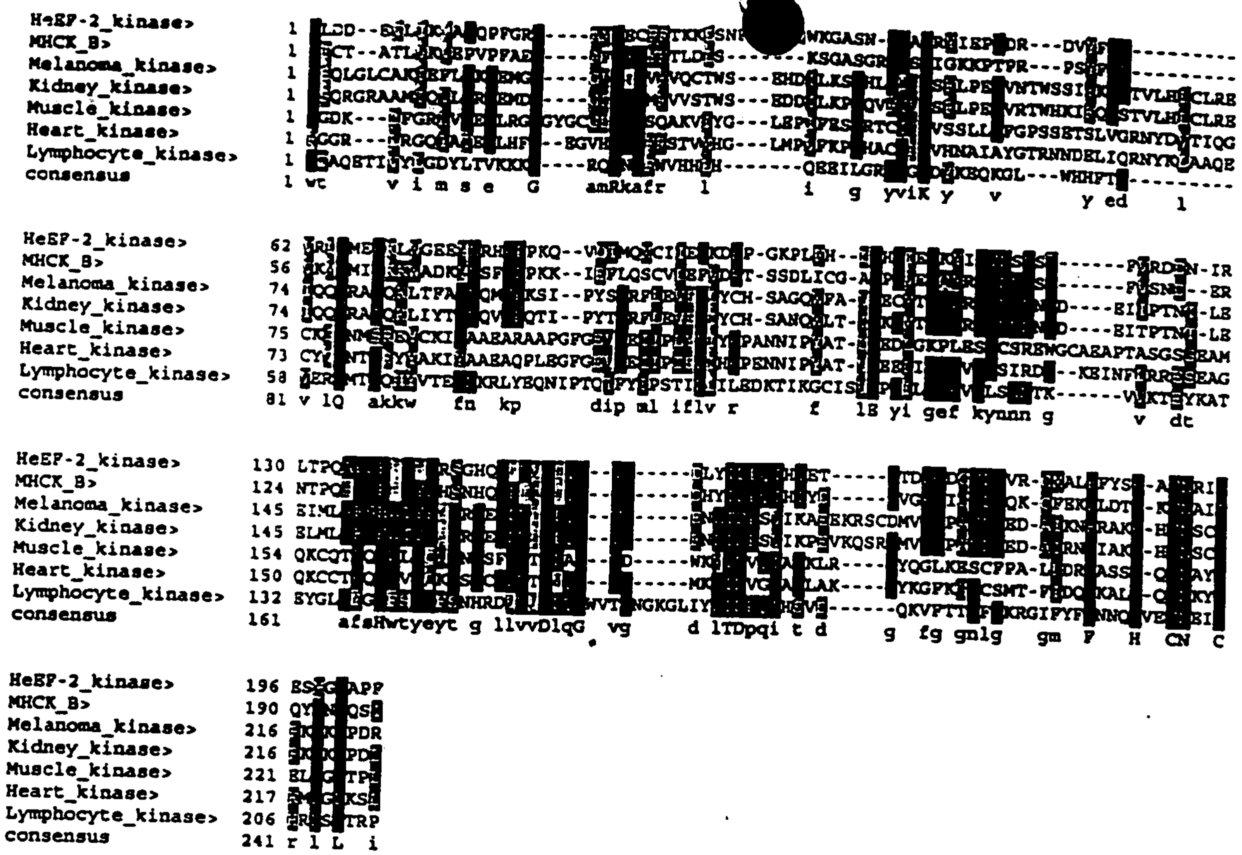

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PHYLOGENETIC TREE OF ALPHA-KINASES

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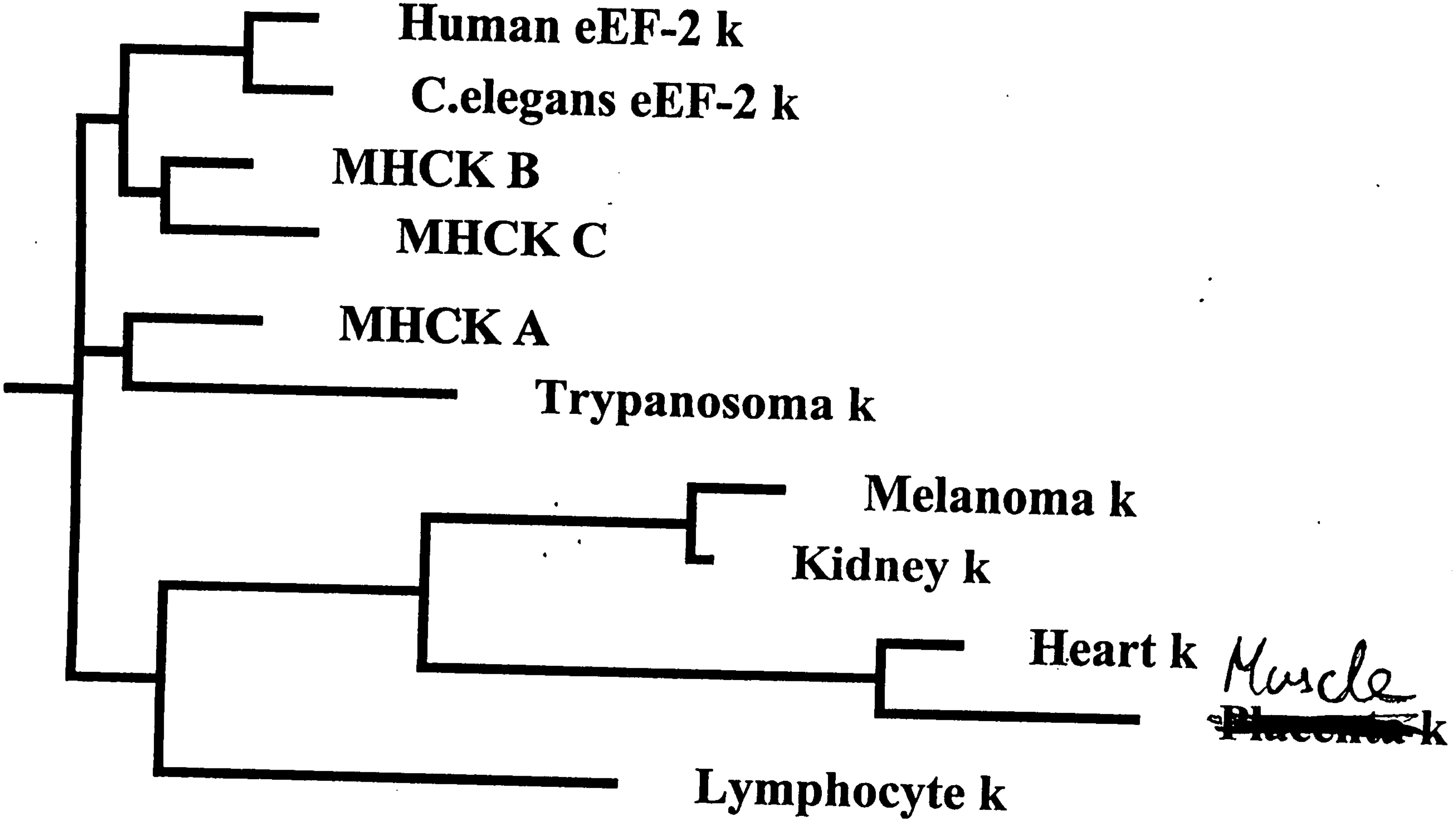


FIGURE 13

Time curve

melanoma kinase
catalytic domain.

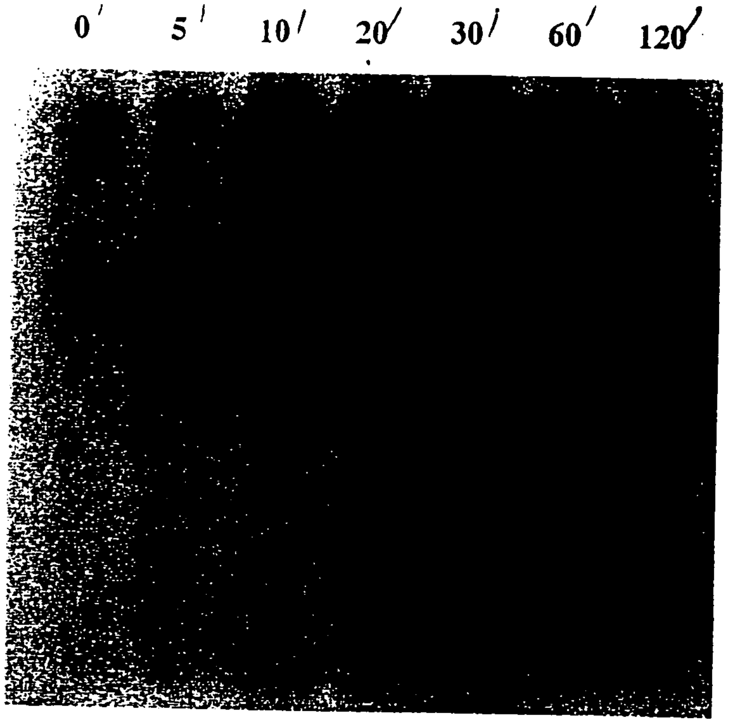


FIGURE 15 *Sheet 26 of 31* **01-1-098** *CIP*

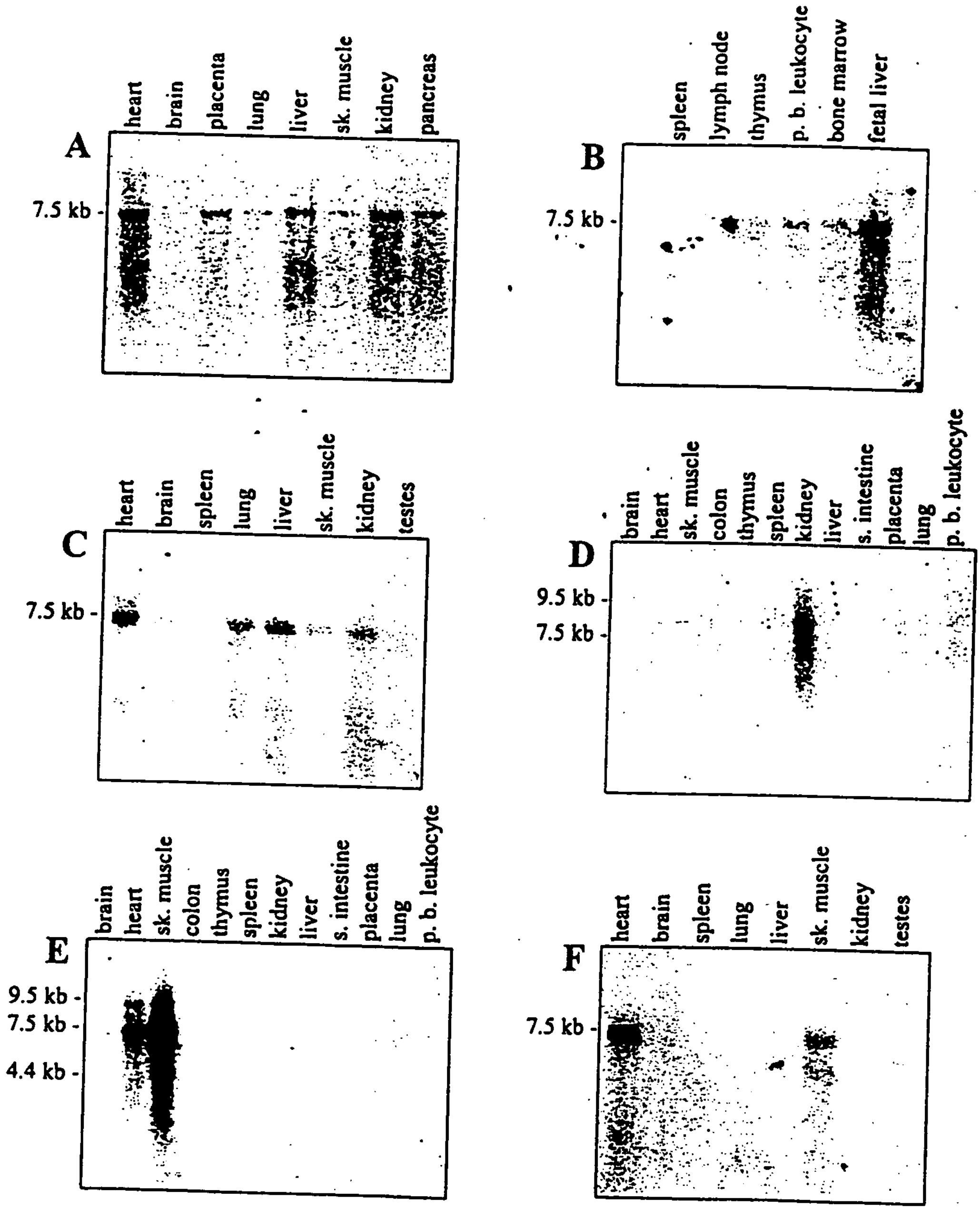
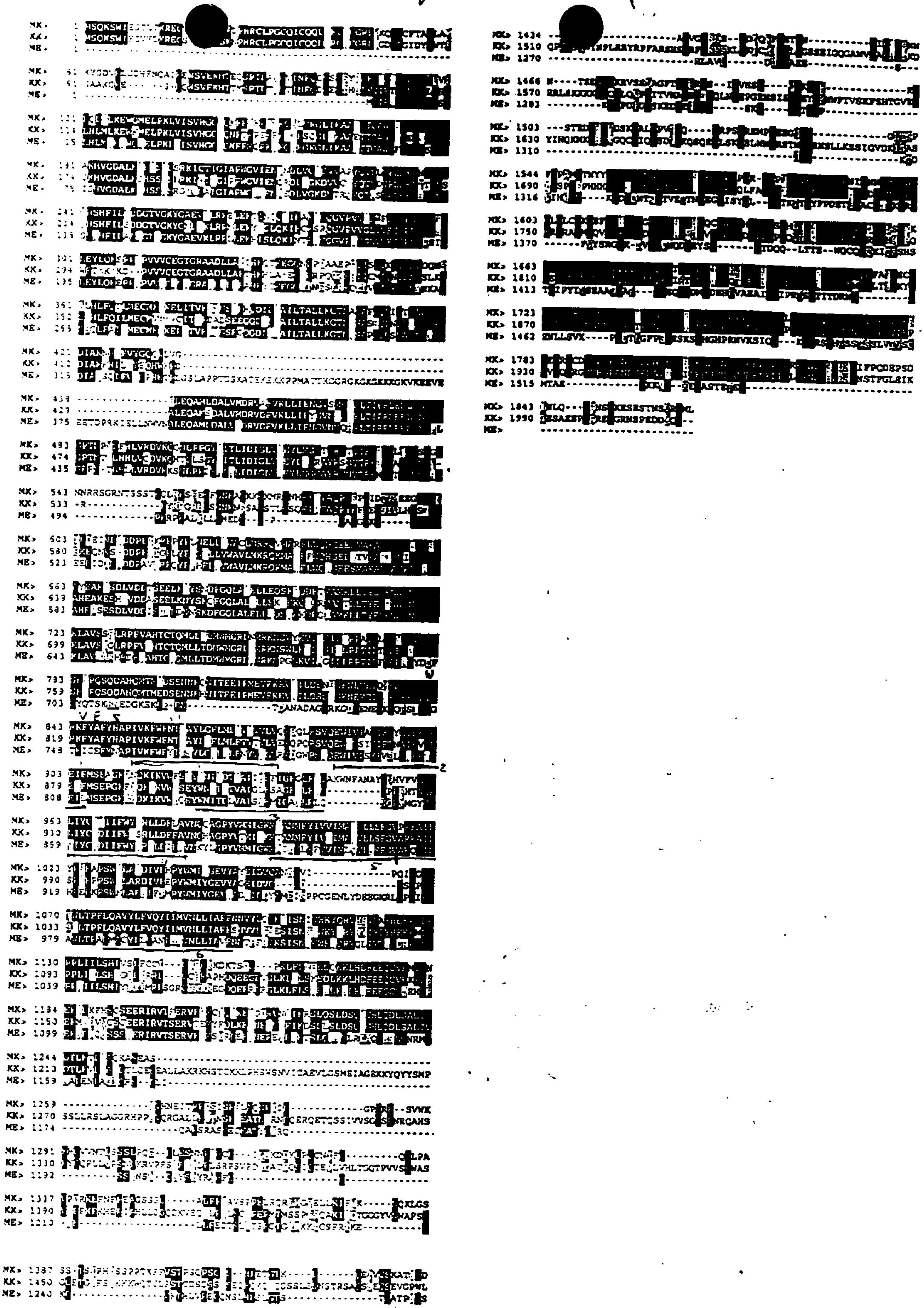


FIGURE 16 Sheet 27 of 31 601-1-098 CIP



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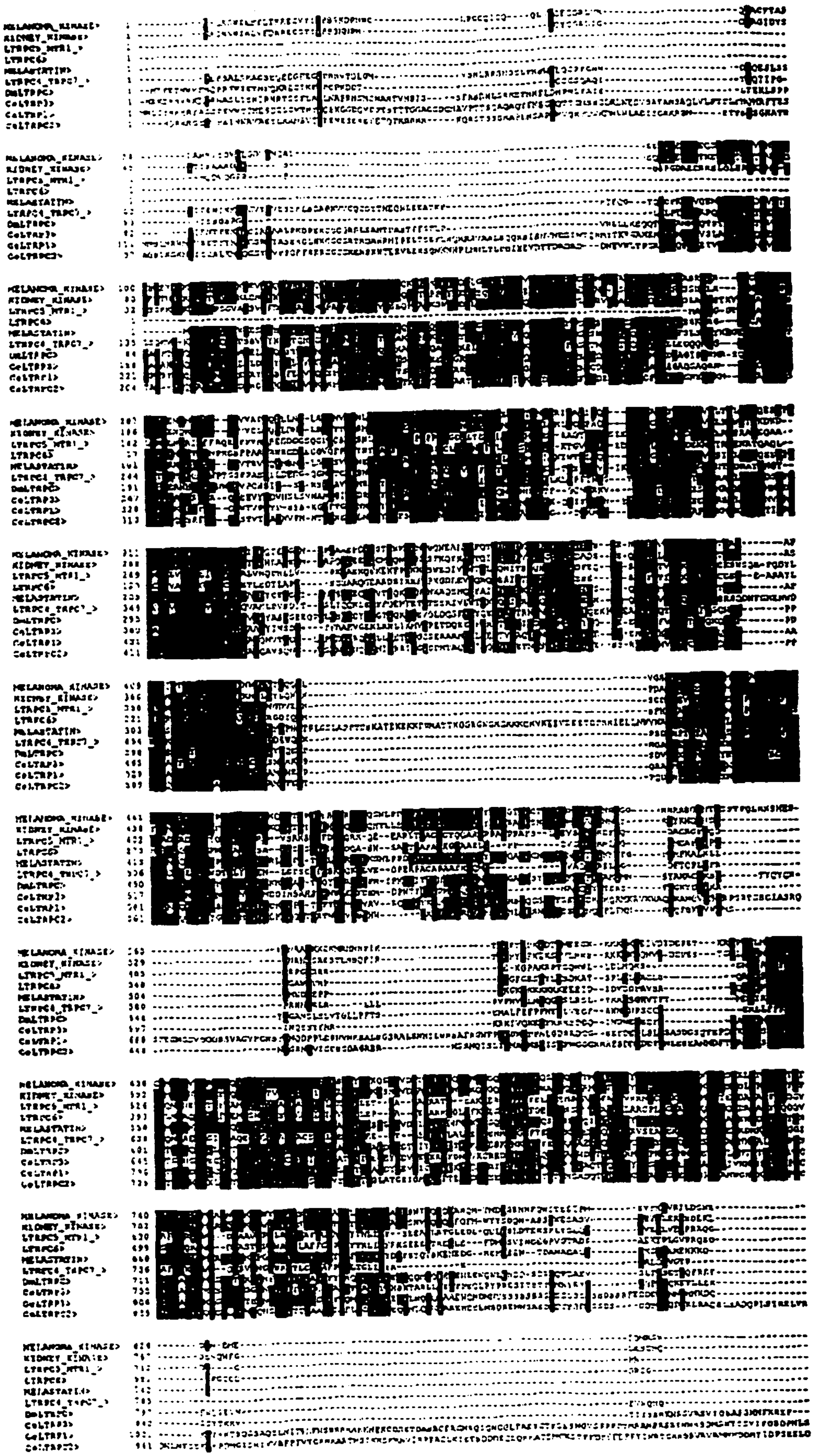

Figure 17

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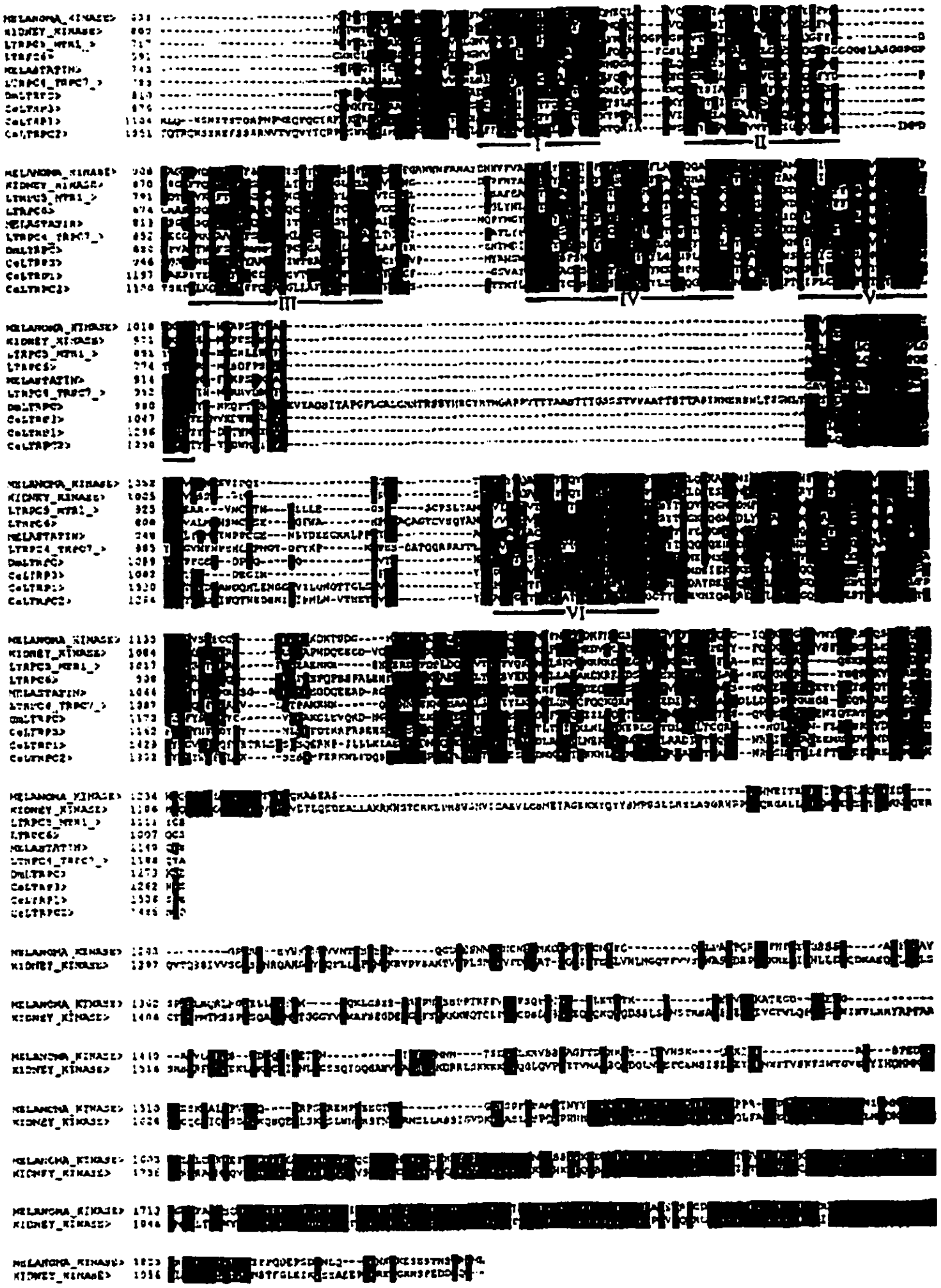

Figure 17

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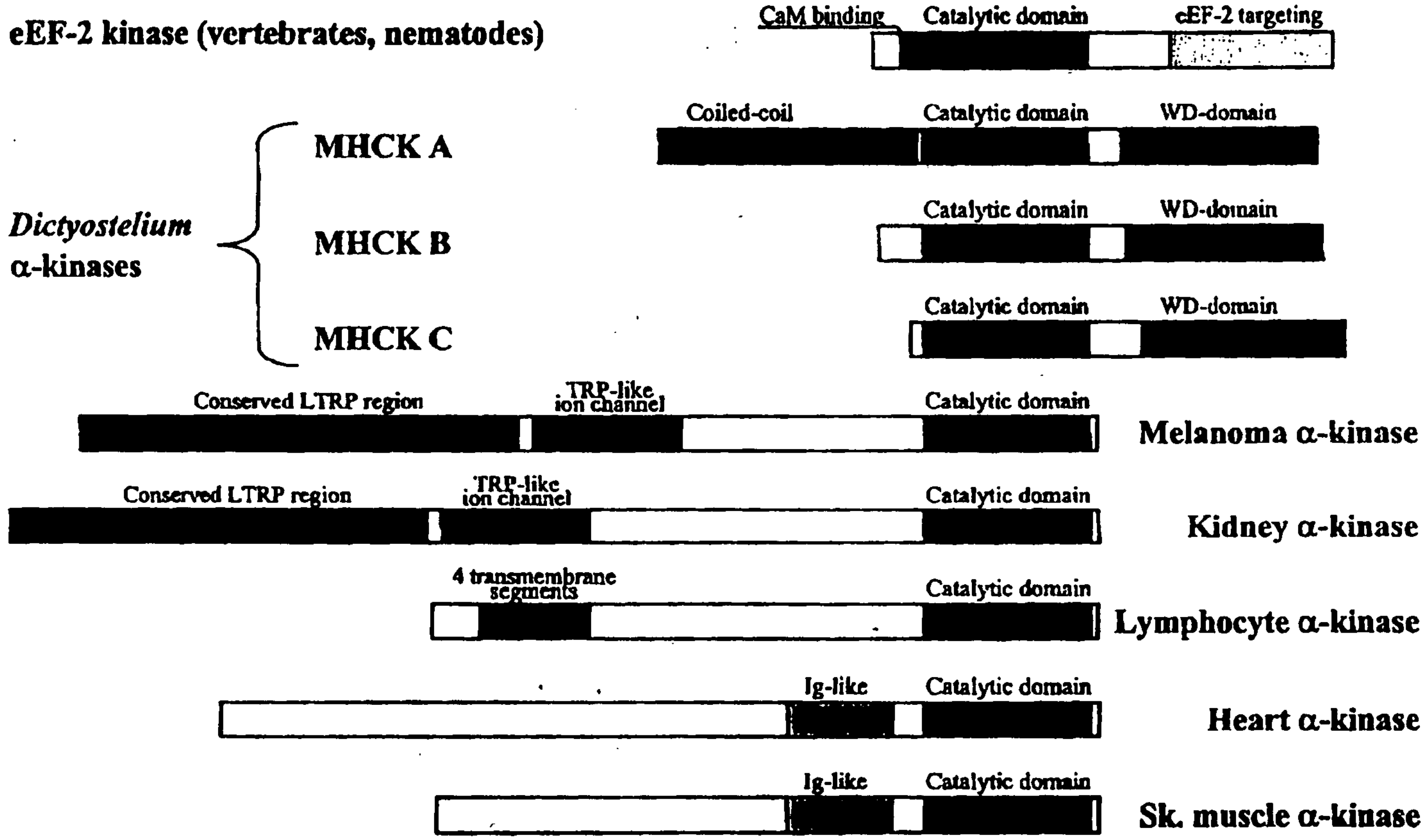

Figure 18

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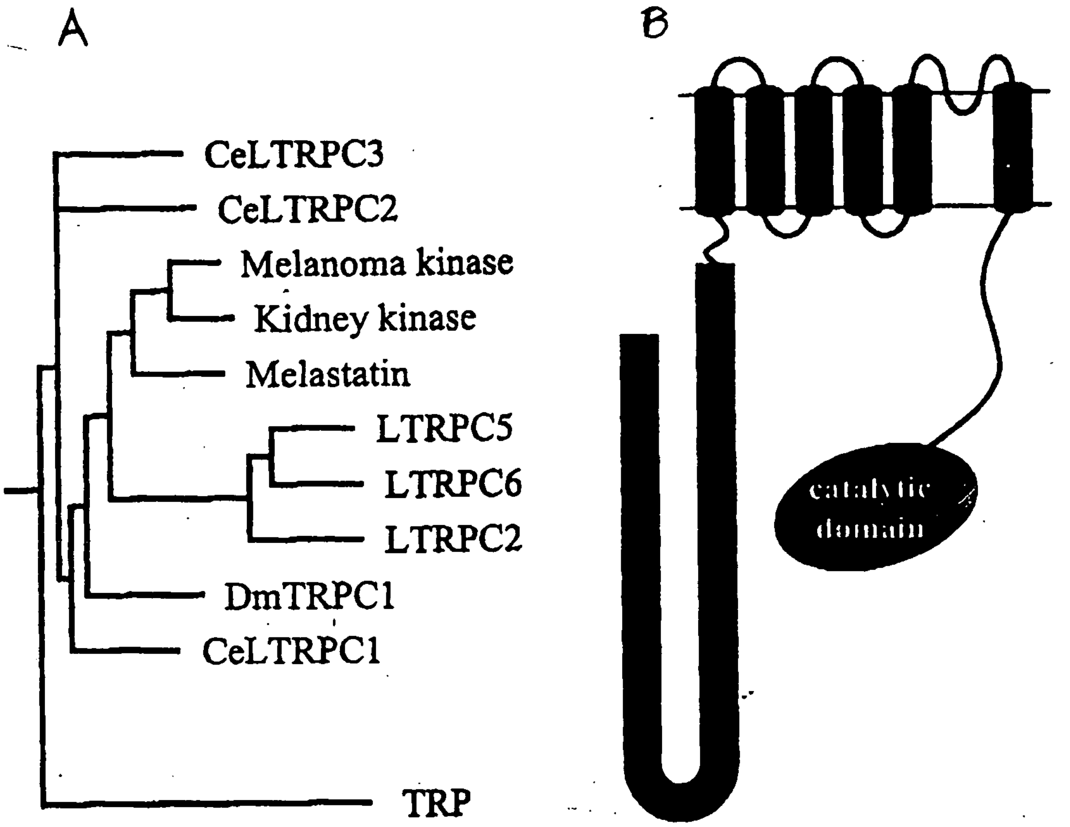

Figure 19A&B